

Amendments to the Claims:

1. (original): An implantable medical device comprising:
 - a housing;
 - a valve disposed within said housing;
 - a first pressure sensor disposed within said housing and upstream of said valve;
 - a second pressure sensor disposed within said housing and downstream of said valve; and
 - a CPU disposed within said housing and being operatively connected to said first pressure sensor and said second pressure sensor.
2. (original): The device according to claim 1, wherein the CPU is electrically connected to said first pressure sensor and said second pressure sensor.
3. (previously presented): The device according to claim 2, wherein the CPU has means for wirelessly communicating within an external device.
4. (previously presented): The device according to claim 3, wherein the CPU has means for calculating a differential pressure between the first pressure sensor and the second pressure sensor.
5. (previously presented): The device according to claim 1, wherein the CPU has means for calculating a differential pressure between the first pressure sensor and the second pressure sensor.
6. (original): The device according to claim 1, further comprising a first catheter fluidly connected to said housing, and a third pressure sensor disposed within said first catheter.

7. (original): The device according to claim 6, wherein said third pressure sensor is operatively connected to said CPU.
8. (original): The device according to claim 7, wherein said first catheter is fluidly connected to said housing upstream of said valve.
9. (previously presented): The device according to claim 8, wherein the CPU has means for wirelessly communicating with an external device.
10. (previously presented): The device according to claim 9, wherein the CPU has means for calculating a differential pressure between the first pressure sensor and the second pressure sensor, and for calculating a differential pressure between the third pressure sensor and at least one of the first pressure sensor and the second pressure sensor.
11. (original): The device according to claim 10, further comprising a second catheter fluidly connected to said housing, and a fourth pressure sensor disposed within said second catheter.
12. (original): The device according to claim 11, wherein said fourth pressure sensor is electrically connected to said CPU.
13. (original): The device according to claim 12, wherein said second catheter is fluidly connected to said housing downstream of said valve.
14. (previously presented): The device according to claim 13, wherein the CPU has means for calculating a differential pressure between the first pressure sensor and the second pressure sensor and for calculating a differential pressure between the fourth pressure sensor and at least one of the first pressure sensor, the second pressure sensor and the third pressure sensor.

15. (previously presented): The device according to claim 1, wherein the CPU has means for being non-invasively powered using RF.
16. (previously presented): The device according to claim 1, wherein the CPU has means for being non-invasively powered using acoustics.
17. (previously presented): The device according to claim 1, wherein the CPU has means for being non-invasively powered using optics.
18. (original): An implantable medical device comprising:
a housing;
a valve disposed within said housing;
a first pressure sensor disposed within said housing and upstream of said valve;
a second pressure sensor disposed within said housing and downstream of said valve; and
a CPU being operatively connected to said first pressure sensor and said second pressure sensor.
19. (original): The implantable medical device according to claim 18, wherein said CPU is disposed within said housing.
20. (original): The implantable medical device according to claim 18, wherein said CPU is disposed external to said housing.
21. (original): A method for diagnosing the performance of an implanted medical device, wherein the implanted medical device has:
a housing;
a valve disposed within said housing;
a first pressure sensor disposed within said housing and upstream of said valve;

a second pressure sensor disposed within said housing and downstream of said valve; and

a CPU disposed within said housing and being operatively connected to said first pressure sensor and said second pressure sensor,

the method comprising the steps of:

comparing the pressure measured by the first pressure sensor to the pressure measured by the second pressure sensor; and

wirelessly communicating the compared pressures to an external device.

22. (original): The method according to claim 21, wherein the device further has a first catheter fluidly connected to said housing, and a third pressure sensor disposed within said first catheter, said method further comprising the steps of:

comparing the pressure measured by the third pressure sensor to one of the pressure measured by the first pressure sensor and second pressure sensor.

23. (original): The method according to claim 22, wherein the device further comprising a second catheter fluidly connected to said housing, and fourth pressure sensor disposed within said second catheter, said method further comprising the step of:

comparing the pressure measured by the fourth pressure sensor to one of the pressure measured by the first pressure sensor, the second pressure sensor and third pressure sensor.

24. (original): A method of diagnosing the performance of an implanted medical device wherein the implanted medical device has:

a housing;

a valve disposed within said housing;

a first pressure sensor disposed within said housing and upstream of said valve;

a second pressure sensor disposed within said housing and downstream of said valve; and

a CPU disposed within said housing and being operatively connected to said first pressure sensor and said second pressure sensor,
the method comprising the steps of:
determining by the CPU, the pressure detected by the first pressure sensor;
determining by the CPU, the pressure detected by the second pressure sensor; and
wirelessly communicating the determined pressures to an external device.

25. (original): An implantable medical device comprising:
a housing;
a valve disposed within said housing;
a differential pressure sensor disposed within said housing ; and
a CPU disposed within said housing and being electrically connected to said differential pressure sensor.
26. (previously presented):The device according to claim 25 wherein the CPU has means for wirelessly communicating within an external device.
27. (original): The device according to claim 25, further comprising a first catheter fluidly connected to said housing, and a second pressure sensor disposed within said first catheter.
28. (original): The device according to claim 27, wherein said second pressure sensor is operatively connected to said CPU.
29. (original): The device according to claim 28, wherein said first catheter is fluidly connected to said housing upstream of said valve.
30. (previously presented):The device according to claim 29, wherein the CPU has means for wirelessly communicating within an external device.

31. (original): The device according to claim 30, further comprising a second catheter fluidly connected to said housing, and a third pressure sensor disposed within said second catheter.

32. (original): The device according to claim 31, wherein said third pressure sensor is operatively connected to said CPU.

33. (original): The device according to claim 32, wherein said second catheter is fluidly connected to said housing downstream of said valve.

34. (previously presented): The device according to claim 25, wherein the CPU has means for being non-invasively powered using RF.

35. (previously presented): The device according to claim 25, wherein the CPU has means for being non-invasively powered using acoustics.

36. (previously presented): The device according to claim 25, wherein the CPU has means for being non-invasively powered using optics.

37. (currently amended): A method of diagnosing the performance of an implanted medical device wherein the implanted medical device has:

a housing;

a valve disposed within said housing;

a differential pressure sensor disposed within said housing; and

a CPU disposed within said housing and being electrically connected to said differential pressure sensor,

the method comprising the steps of:

determining by the CPU, the pressure detected by the differential pressure sensor; and

wirelessly communicating the determined pressure to an external device.

38. (original): A method for diagnosing the performance of an implanted medical device, wherein the implanted medical device has:

- a housing;
- a valve disposed within said housing;
- a first pressure sensor disposed within said housing and upstream of said valve; and
- a second pressure sensor disposed within said housing and downstream of said valve;

the method comprising the steps of:

- wirelessly communicating a signal representative of the pressure detected by the first pressure sensor to an external device;
- wirelessly communicating a signal representative of the pressure detected by the second pressure sensor to an external device; and
- comparing the pressure detected by the first pressure sensor to the pressure detected by the second pressure sensor with the external device.

39. (original): A method for diagnosing the performance of an implanted medical device, wherein the implanted medical device has:

- a housing;
- a valve disposed within said housing;
- a first pressure sensor disposed within said housing and upstream of said valve; and
- a second pressure sensor disposed within said housing and downstream of said valve;

the method comprising the steps of:

- generating a signal from the first pressure sensor;
- generating a signal from the second pressure sensor;
- comparing the signals from the first pressure sensor and the second pressure sensor;

generating a signal representative of the difference in pressure between the pressure measured by the first pressure sensor and the pressure measured by the second pressure sensor;

wirelessly communicating the signal representative of the difference in pressure to an external device.

40. (original): An implantable medical device comprising:
a housing;

a valve disposed within said housing;

a first pressure sensor disposed within said housing and upstream of said valve; and

a second pressure sensor disposed within said housing and downstream of said valve.

41. (previously presented): The device according to claim 1, wherein said first pressure sensor and said second pressure sensor are disposed on a common substrate.

42. (previously presented): The device according to claim 41, wherein said CPU is disposed on said common substrate.

43. (previously presented): The device according to claim 18, wherein said first pressure sensor and said second pressure sensor are disposed on a common substrate.

44. (previously presented): The device according to claim 43, wherein said CPU is disposed on said common substrate.

45. (previously presented): The device according to claim 25, wherein said differential pressure sensor and said CPU are disposed on a common substrate.

46. (previously presented): The device according to claim 40, wherein said first pressure sensor and said second pressure sensor are disposed on a common substrate.